

AMENDMENTS TO THE CLAIMS

1. (Original) A PNA probe comprising a nucleobase sequence suitable for the analysis of one or more *Staphylococcus* species other than *S. aureus*.
2. (Original) A PNA probe comprising a nucleobase sequence suitable for the analysis of two or more *Staphylococcus* species other than *S. aureus*.
3. (Currently Amended) A PNA probe of claims 1-2 1 or 2, wherein a target sequence of the *Staphylococcus* species is rRNA, rDNA or a complement of rRNA or rDNA.
4. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus epidermidis*, said PNA probe being complementary to a target sequence of *Staphylococcus epidermidis* rRNA or rDNA or its complement.
5. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus hominis*, said PNA probe being complementary to a target sequence of *Staphylococcus hominis* rRNA or rDNA or its complement.
6. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus haemolyticus*, said PNA probe being complementary to a target sequence of *Staphylococcus haemolyticus* rRNA or rDNA or its complement.
7. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus lugdunensis*, said PNA probe being complementary to a target sequence of *Staphylococcus lugdunensis* rRNA or rDNA or its complement.

8. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus saprophyticus* said PNA probe being complementary to a target sequence of *Staphylococcus saprophyticus* rRNA or rDNA or its complement.
9. (Currently Amended) A PNA probe of claims 1-2 1 or 2, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus epidermidis* and one or more other *Staphylococcus* species other than *Staphylococcus aureus*, said PNA probe being complementary to a target sequence of *Staphylococcus epidermidis* rRNA or rDNA or its complement
10. (Original) A PNA probe of claim 1, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus hominis* and one or more other *Staphylococcus* species other than *Staphylococcus aureus*, said PNA probe being complementary to a target sequence of *Staphylococcus hominis* rRNA or rDNA or its complement.
11. (Original) A PNA probe of claim 1, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus haemolyticus* and one or more other *Staphylococcus* species other than *Staphylococcus aureus*, said PNA probe being complementary to a target sequence of *Staphylococcus haemolyticus* rRNA or rDNA or its complement.
12. (Original) A PNA probe of claim 1, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus lugdunensis* and one or more other *Staphylococcus* species other than *Staphylococcus aureus*, said PNA probe being complementary to a target sequence of *Staphylococcus lugdunensis* rRNA or rDNA or its complement.

13. (Original) A PNA probe of claim 1, comprising a nucleobase sequence suitable for the analysis of *Staphylococcus saprophyticus* and one or more other *Staphylococcus* species other than *Staphylococcus aureus*, said PNA probe being complementary to a target sequence of *Staphylococcus saprophyticus* rRNA or rDNA or its complement.
14. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein at least a portion of the probe is at least about 86% identical to the nucleobase sequence or complement thereof selected from the following sequences: TCT-AAC-ATG-TTC-TTT (Seq. Id. No. 1), TCT-AGT-CTG-TTC-TTT (Seq. Id. No. 2), TCT-AAT-ATA-TTC-CTT (Seq. Id. No. 3), TCT-AAT-ATA-TAC-TTT (Seq. Id. No. 4), GCT-CCA-AAT-GGT-TAC (Seq. Id. No. 5), TCC-TCG-TCT-GTT-CGC (Seq. Id. No. 6), CTC-CTT-ATC-TGT-TCG-C (Seq. Id. No. 7), and CTC-CTT-GTC-TGT-TCG-C (Seq. Id. No. 8), CTT-CTC-ATC-TGT-TCG-C (Seq. Id. No. 9), TCC-TCG-TCC-GTT-CGC (Seq. Id. No. 10), TCC-TTG-TCC-GTT-CGC (Seq. Id. No. 11).
15. (Currently Amended) The PNA probe of any one of claims 1, 2 or 9-13, wherein at least a portion of the probe is selected from the following sequences: TCT-AAC-ATG-TTC-TTT (Seq. Id. No. 1), TCT-AGT-CTG-TTC-TTT (Seq. Id. No. 2), TCT-AAT-ATA-TTC-CTT (Seq. Id. No. 3), TCT-AAT-ATA-TAC-TTT (Seq. Id. No. 4), GCT-CCA-AAT-GGT-TAC (Seq. Id. No. 5), TCC-TCG-TCT-GTT-CGC (Seq. Id. No. 6), CTC-CTT-ATC-TGT-TCG-C (Seq. Id. No. 7), and CTC-CTT-GTC-TGT-TCG-C (Seq. Id. No. 8), CTT-CTC-ATC-TGT-TCG-C (Seq. Id. No. 9), TCC-TCG-TCC-GTT-CGC (Seq. Id. No. 10), TCC-TTG-TCC-GTT-CGC (Seq. Id. No. 11).
16. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein the probe sequence is 8-17 subunits in length.

17. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein the probe is labeled with at least one detectable moiety.
18. (Original) The PNA probe of claim 17, wherein the detectable moiety or moieties are selected from the group consisting of: a conjugate, a branched detection system, a chromophore, a fluorophore, a spin label, a radioisotope, an enzyme, a hapten, an acridinium ester and a luminescent compound.
19. (Original) The PNA probe of claim 17, wherein the probe is self-reporting.
20. (Original) The PNA probe of claims 19, wherein the probe is a PNA Linear Beacon.
21. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein the probe is unlabeled.
22. (Original) The PNA probe of claim 21, wherein the probe is bound to a support.
23. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein the probe further comprises a spacer or a linker.
24. (Currently Amended) The PNA probe of any one of claims 1, 2, or 9-13, wherein *in situ* hybridization is used for analysis of one or more *Staphylococcus* species other than *S. aureus*.
25. (Original) A PNA probe set comprising, one or more PNA probes of claims 1-24 and at least one PNA probe for the analysis of *S. aureus*.

26. (Original) A PNA probe set of claim 25, wherein the probes are differently labeled for independent analysis of two or more *Staphylococcus* species.
27. (Original) A PNA probe set of claim 25, wherein the PNA probes comprise PNA probes wherein at least a portion of each probe is selected from the following sequences: TCC-TCG-TCT-GTT-CGC (Seq. Id. No. 6), CTC-CTT-ATC-TGT-TCG-C (Seq. Id. No. 7), CTC-CTT-GTC-TGT-TCG-C (Seq. Id. No. 8), CTT-CTC-ATC-TGT-TCG-C (Seq. Id. No. 9), TCC-TCG-TCC-GTT-CGC (Seq. Id. No. 10), TCC-TTG-TCC-GTT-CGC (Seq. Id. No. 11).
28. (Original) A PNA probe set of claim 25, wherein the at least one PNA probe for the analysis of *S. aureus* is differently labeled from the one or more PNA probes of claims 1-24.
29. (Original) A PNA probe set of claim 28, wherein at least a portion of one of the at least one PNA for the analysis of *S. aureus* is selected from the following sequence: GCT-TCT-CGT-CCG-TTC.
30. (Original) A PNA probe set comprising one or more PNA probes of claims 1-24 and at least one PNA blocking probe for the analysis of one or more *Staphylococcus* species other than *S. aureus*.
31. (Original) A PNA probe set of claim 30, further comprising a PNA blocking probe for analysis of *S. aureus*.
32. (Original) A PNA probe set of claim 31, wherein at least a portion of the PNA blocking probe for analysis of *S. aureus* is selected from the following sequences: TCC-TCG-TCT-GTT-CGC (Seq. Id. No. 6), CTC-CTT-ATC-TGT-TCG-C (Seq. Id. No. 7), CTC-CTT-GTC-TGT-TCG-C (Seq. Id. No. 8), CTT-CTC-ATC-TGT-TCG-C

(Seq. Id. No. 9), TCC-TCG-TCC-GTT-CGC (Seq. Id. No. 10), TCC-TTG-TCC-GTT-CGC (Seq. Id. No. 11).

33. (Original) A method for the analysis of *Staphylococcus* species other than *S. aureus* in a sample, comprising: a) contacting at least one of the PNA probes of claims 1-24 to the sample,
b) hybridizing the PNA probe to a target sequence of *Staphylococcus* species other than *S. aureus* in the sample; and
c) detecting the hybridization, wherein the detection of hybridization is indicative of the presence, identity and/or amount of *Staphylococcus* species other than *S. aureus* in the sample.
34. (Original) A method for the analysis of two or more *Staphylococcus* species, said method comprising: a) contacting a PNA probe set of claims 1-24 to the sample,
b) hybridizing the PNA probes to a target sequence of *Staphylococcus* species in the sample; and
c) detecting the hybridization, wherein the detection of hybridization is indicative of the presence, identity and/or amount of *Staphylococcus* species in the sample.
35. (Currently Amended) A method of claims ~~33—34~~ 33 or 34, wherein two or more *Staphylococcus* species are *S. aureus* and one or more *Staphylococcus* species other than *S. aureus*.
36. (Currently Amended) The method of claims ~~33—35~~ 33 or 34, for analysis of a cohort of *Staphylococcus* species other than *S. aureus*.
37. (Original) The method of claims 36 in which the cohort of *Staphylococcus* species other than *S. aureus* detected is Coagulase-Negative Staphylococci, clinically

significant Coagulase-Negative Staphylococci, or a subset of clinically significant Coagulase-Negative Staphylococci.

38. (Currently Amended) The method of claim ~~33-37~~ 33 or 34, wherein the probes are independently detectable non-independently detectable, or a combination of independently and non-independently detectable, wherein the probes differ from one another by as little as a single base, and are complementary or substantially complementary to partially conserved target regions of phylogenetically related organisms.
39. (Original) The method of claim 38, wherein probes or probe sets are used to eliminate or reduce cross hybridization between a *Staphylococcus aureus* specific probe, and a *Staphylococcus scheiferi* target.
40. (Currently Amended) A method of claim ~~33-39~~ 33 or 34, wherein *S. aureus* and one or more *Staphylococcus* species other than *S. aureus* are simultaneously and independently detected.
41. (Currently Amended) A method according to claim ~~33-40~~ 33 or 34, wherein the analysis takes place *in situ*.
42. (Original) A method according to claim 41, wherein the analysis takes place by fluorescence *in situ* hybridization.
43. (Currently Amended) The method of claim ~~33-40~~ 33 or 34, wherein the method is used to detect a nucleic acid comprising a target sequence wherein said nucleic acid has been synthesized or amplified in a reaction.

44. (Original) The method of claim 43, wherein preferred nucleic acid synthesis or nucleic acid amplification reactions are selected from the group consisting of: Polymerase Chain Reaction (PCR), Ligase Chain Reaction (LCR), Strand Displacement Amplification (SDA), Transcription-Mediated Amplification (TMA), Rolling Circle Amplification (RCA) and Q beta replicase.
45. (Currently Amended) The method of claim ~~33-44~~ 33 or 34, wherein the method further comprises adding at least one blocking probe to reduce or eliminate hybridization of the PNA probe to non-target sequence.
46. (Currently Amended) The method of claim ~~33-40~~ 33 or 34, wherein the target sequence is immobilized to a surface.
47. (Currently Amended) The method of claim ~~33-40~~ 33 or 34, wherein said PNA probe is immobilized to a surface.
48. (Currently Amended) The method of claim ~~33-40~~ 33 or 34, wherein said PNA probe is one component of an array.
49. (Currently Amended) The method of claims ~~33-48~~ 33 or 34, wherein the sample is a biological sample.
50. (Original) The method of claim 49, wherein the biological sample is blood, urine, secretion, sweat, sputum, stool, mucous, or cultures thereof.
51. (Original) A kit suitable for performing an assay for analysis of one or more *Staphylococcus* species other than *S. aureus* in a sample, wherein said kit comprises: a) a PNA probe according to claim 1 to 24 and b) other reagents or

compositions necessary to perform the assay.

52. (Original) The kit of claim 51, wherein one or more *Staphylococcus* species other than *S. aureus* and at least one other microorganism optionally present in a sample are independently detected, identified and/or quantitated.
53. (Original) The kit of claim 52, wherein one or more *Staphylococcus* species other than *S. aureus* and *S. aureus* optionally present in a sample are independently detected, identified and/or quantitated.
54. (Original) The kit of any one of claims 51-53, wherein one or more *Staphylococcus* species other than *S. aureus* optionally present in a sample is detected, identified and/or quantitated and its susceptibility to antimicrobial agents is determined.
55. (Currently Amended) The kit of any one of claims ~~51-54~~ 51 - 53, wherein one or more *Staphylococcus* species other than *S. aureus* detected is Coagulase-Negative Staphylococci, clinically significant Coagulase-Negative Staphylococci, or a subset of clinically significant Coagulase-Negative Staphylococci.
56. (Currently Amended) The kit of any one of claims ~~51-55~~ 51 - 53, wherein the kit is used in an *in situ* hybridization assay.
57. (Original) The kit of claim 56, wherein the kit is a fluorescence *in situ* hybridization assay for simultaneous, independent (multiplex) identification of one more *Staphylococcus* species other than *S. aureus* and of *S. aureus*.
58. (Currently Amended) The kit of ny one of claims ~~51-55~~ 51 - 53, wherein the kit is used for a real-time PCR assay.

59. (Currently Amended) The kit of any one of claims ~~51-58~~ 51 - 53,
wherein the kit is used to examine clinical samples such as clinical
specimens or cultures thereof.